Summary

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This summary covers the major points of the supplemental draft environmental impact statement (**SDEIS**) prepared for the Kangley-Echo Lake Transmission Project proposed by the Bonneville Power Administration (**BPA**). The Proposed Action involves constructing a new 500-***kilovolt*** (***kV***) line in central King County, Washington. The new line would connect an existing line near the community of Kangley to BPA's existing Echo Lake Substation nine miles to the north. The project would also involve expansion of that substation to accommodate the new transmission line. BPA is also considering other transmission and non-transmission alternatives. As a federal agency, BPA is required by the National Environmental Policy Act (**NEPA**) to take into account potential environmental consequences of its proposal and take action to protect, restore, and enhance the environment during and after construction. Preparation of this environmental impact statement (**EIS**) assists in meeting those requirements.

➲ For Your Information

Words in bold are defined in sidebars or in the glossary.

*A **kilovolt** is one thousand volts.*

***Load** - The amount of electric power or energy delivered or required at any specified point or points on a system. Load originates primarily at the energy-consuming equipment of customers.*

*A **megawatt** is one million watts, or one thousand kilowatts. A megawatt is enough power to light 10,000 100-watt lightbulbs.*

***Voltage** is the driving force that causes a current to flow in an electrical circuit.*

*A **brownout** is a partial reduction of electrical voltages that causes lights to dim and motor-driven devices to lose efficiency.*

*A **blackout** is the disconnection of the source of electricity from all electrical loads in a certain geographical area.*

S.1 Purposes and Need for Action

S.1.1 Background summary

BPA's existing transmission system in the Puget Sound area provides reliable power to customers throughout the Northwest, and to other regions and Canada. As population grows, however, the need for electrical energy increases. Winter ***loads*** in the Puget Sound area alone are forecasted to increase 150-200 ***megawatts (MW)*** per year over the next decade, an average annual growth rate of 1.6 percent.

BPA is required to ensure its transmission system can reliably serve customer power needs under all operating conditions, including times of peak use (maximum demand). BPA system planners now anticipate peak use could exceed existing system capacity as soon as winter 2002-03. When system capacity is exceeded, the ***voltage*** on transmission lines can drop below acceptable levels, causing ***brownouts***, or can cause automatic devices to disconnect lines and cut off power entirely, causing a ***blackout***. To avoid these unplanned outages, system

operators may try selectively ***dropping*** or ***shedding loads***, purposefully disconnecting some customers to prevent equipment damage or widespread loss of load. Whether planned or unplanned, electrical outages can be inconvenient, costly and even dangerous to customers, especially in winter during a cold snap.

Consequently, BPA needs to improve its transmission system to ensure continued reliable electrical power for Puget Sound area customers and other regions.

S.1.2 BPA's Purposes

"Purposes" are goals to be achieved while meeting the need for the project. These objectives are used to evaluate alternatives proposed to meet the need. BPA will use the following purposes to choose among the alternatives:

- Facilitate the orderly planning of the region's power system [Northwest Power Act (16 USC section 839(3)(B)];
- Increase BPA system capacity to meet growing customer demand for electricity (Northwest Power Act 16 USC section 839(4) and 16 USC 839a(4)(A)(i);
- Maintain BPA transmission system reliability [Federal Columbia River Transmission Act (16 USC 838b(d); Northwest Power Act 16 USC section 839(2) and 16 USC 839a(4)(A)(i)];
- Maintain environmental quality [Northwest Power Act 16 USC 839(3)(C)];
- Minimize impacts to the human environment through site selection and transmission line design (National Environmental Policy Act 42 USC 4321 et seq., and Endangered Species Act 16 USC 1531 et seq.)
- Minimize costs to BPA's ratepayers [Northwest Power Act 16 USC 839(2) and 16 USC 839a(4)(A)(ii)] while meeting BPA's long-term transmission system objectives for the area.

S.2 Alternatives

BPA conducts region-wide transmission planning studies annually. Looking several years into the future to ensure reliable electric service, the studies use a computer model called a "power flow" to represent the system as it is expected to operate. The studies indicate a new transmission line is needed by winter 2002-03 to reliably serve potential peak load in the Puget Sound area during an "extreme" cold weather event and by winter 2005-06 to serve even "normal" peak winter load.